

CLAIMS

1. An inkjet ink composition comprising a) a liquid vehicle and b) a modified azo pigment, wherein the modified azo pigment is the reaction product of at least one first diazonium reagent, at least one second diazonium reagent, and at least one azo coupler, wherein the inkjet ink composition does not include a separate dispersant which primarily functions to obtain or maintain stability of the modified azo pigment or the ink jet ink composition.
2. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises at least one ionic group, at least one ionizable group, or a mixture of at least one ionic group and at least one ionizable group.
3. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises at least one sulfonic acid group or salt thereof, at least one carboxylic acid group or salt thereof, at least one amine group, or at least one ammonium group.
4. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises at least one $-\text{COO}^-$, $-\text{SO}_3^-$, $-\text{OSO}_3^-$, $-\text{HPO}_3^-$, $-\text{OPO}_3^{-2}$, or $-\text{PO}_3^{-2}$ group.
5. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises at least one benzylamine group, phenylethylamine group, phenyleneamine group, or aminoalkyl amine group.
6. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises at least one alkylene oxide group.

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7. The inkjet ink composition of claim 1, wherein the first diazonium reagent or the second diazonium reagent comprises an aromatic group.
8. The inkjet ink composition of claim 1, wherein the azo coupler comprises an acetoacetamide group.
9. The inkjet ink composition of claim 1, wherein the azo coupler comprises a 2-hydroxynaphthalene-3-carboxamide group.
10. The inkjet ink composition of claim 1, wherein the liquid vehicle is an aqueous vehicle.
11. The inkjet ink composition of claim 10, wherein the aqueous vehicle is water.
12. An inkjet ink composition comprising a) a liquid vehicle and b) a modified azo pigment, wherein the modified colored pigment is the reaction product at least one diazonium reagent, at least one first azo coupler, and at least one second azo coupler, wherein the inkjet ink composition does not include a separate dispersant which primarily functions to obtain or maintain stability of the modified azo pigment or the ink jet ink composition.
13. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises at least one ionic group, at least one ionizable group, or a mixture of at least one ionic group and at least one ionizable group.
14. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises at least one sulfonic acid group or salt thereof, at least one carboxylic acid group or salt thereof, at least one amine group, or at least one ammonium group.

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15. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises at least one $-\text{COO}^-$, $-\text{SO}_3^-$, $-\text{OSO}_3^-$, $-\text{HPO}_3^-$, $-\text{OPO}_3^{-2}$, and $-\text{PO}_3^{-2}$ group.
16. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises at least one benzylamine group, phenylethylamine group, phenyleneamine group, or aminoalkyl amine group.
17. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises at least one alkylene oxide group.
18. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises an acetoactamide group.
19. The inkjet ink composition of claim 12, wherein the first azo coupler or the second azo coupler comprises a 2-hydroxynaphthalene-3-carboxamide group.
20. The inkjet ink composition of claim 12, wherein the diazonium reagent comprises an aromatic group.
21. The inkjet ink composition of claim 12, wherein the liquid vehicle is an aqueous vehicle.
22. The inkjet ink composition of claim 21, wherein the aqueous vehicle is water.
23. A method of preparing an inkjet ink composition, comprising the steps of:
- a) combining, in any order, at least one first diazonium reagent, at least one second diazonium reagent, and at least one azo coupler to form a slurry comprising a modified azo pigment;
 - b) filtering the slurry to form a modified azo pigment presscake;

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c) adding an aqueous vehicle to the presscake under high shear conditions to form a modified azo pigment dispersion; and

d) optionally adding at least one additional component to the modified azo pigment dispersion to form the inkjet ink composition,

wherein no separate dispersant which primarily functions to obtain or maintain stability of the modified azo pigment is added to the modified azo pigment dispersion of step (c) or the inkjet ink composition of step (d).

24. The method of claim 23, wherein the first diazonium reagent or the second diazonium reagent comprises at least one ionic group, at least one ionizable group, or a mixture of at least one ionic group and at least one ionizable group.

25. The method of claim 23, wherein the first diazonium reagent or the second diazonium reagent comprises at least one alkylene oxide group.

26. The method of claim 23, wherein the aqueous vehicle is water.

27. The method of claim 23, wherein step c) further comprises the step of adding base.

28. The method of claim 23, wherein the first diazonium reagent and the second diazonium reagent are combined to form a mixture of diazonium reagents, and wherein the mixture of diazonium reagents and the azo coupler are combined, in any order.

29. The method of claim 23, wherein the first diazonium reagent is added to the azo coupler to form a mixture of azo pigment and the azo coupler, and wherein the mixture of azo pigment and azo coupler and the second diazonium reagent are combined, in any order.

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30. The method of claim 29, wherein the second diazonium reagent is combined with the mixture of azo pigment and the azo coupler prior to complete reaction of the first diazonium reagent.

31. A method of preparing an inkjet ink composition, comprising the steps of:

a) combining, in any order, at least one diazonium reagent, at least one first azo coupler, and at least one second azo coupler to form a slurry comprising a modified azo pigment;

b) filtering the slurry to form a modified azo pigment presscake;

c) adding an aqueous vehicle to the presscake under high shear conditions to form a modified azo pigment dispersion; and

d) optionally adding at least one additional component to the modified azo pigment dispersion to form the inkjet ink composition,

wherein no separate dispersant which primarily functions to obtain or maintain stability of the modified azo pigment is added to the modified azo pigment dispersion of step (c) or the inkjet ink composition of step (d).

32. The method of claim 31, wherein the first azo coupler or the second azo coupler comprises at least one ionic group, at least one ionizable group, or a mixture of at least one ionic group and at least one ionizable group.

33. The method of claim 31, wherein the first azo coupler or the second azo coupler comprises at least one alkylene oxide group.

34. The method of claim 31, wherein the aqueous vehicle is water.

35. The method of claim 31, wherein step c) further comprises the step of adding base.

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36. The method of claim 31, wherein the first azo coupler and the second azo coupler are combined to form a mixture of azo couplers, and wherein the mixture of azo couplers and the diazonium reagent are combined, in any order.

37. The method of claim 31, wherein the first azo coupler is added to the diazonium reagent to form a mixture of azo pigment and diazonium reagent, and wherein the mixture of azo pigment and the diazonium reagent and the second azo coupler are combined, in any order.

38. The method of claim 31, wherein the second azo coupler is combined with the mixture of azo pigment and the diazonium reagent prior to complete reaction of the first azo coupler.